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NTANA CLINICAL COMMUNICATION & SURVEILLANCE REPORT

MONTANA
CARDIOVASCULAR HEALTH AND DIABETES PROGRAMS

Montana Department of Public Health and Human Services
Chronic Disease Prevention and Health Promotion Program
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CARDIAC REHABILITATION IN MONTANA AND NORTHERN WYOMING: IMPLEMENTING A REGIONAL OUTCOMES PROJECT, 2006-2007

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Diabetes Professional Conference – Great Northern Hotel, Helena, Montana, October 11 – 12, 2007

Wyoming Chronic Disease Conference – Little America Hotel, Cheyenne, Wyoming, May 7 – 8, 2008

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INTRODUCTION

Cardiac rehabilitation (rehab) is an integral part of recovery from an acute cardiac event. The goal of cardiac rehab is to increase symptom-free functional capacity, reduce risk factors by modifying behaviors to decrease the risk of future cardiac events and improve quality of life. The benefits and safety of cardiac rehab are well established and have been studied intensively.[1-4] Nonetheless, nationally only 10-20% of those eligible received cardiac rehab.[5] Precise estimates of the percentage of individuals receiving cardiac rehab are not available for Montana, but there are unique challenges to accessing cardiac rehab services in rural states.

In 2005, the Montana Cardiovascular Health (CVH) Program and the Montana Association of Cardiovascular and Pulmonary Rehabilitation (MACVPR) conducted a survey of all cardiac rehab programs in Montana and northern Wyoming. The goal of the survey was not only to establish baseline program characteristics but also to evaluate the program's ability and willingness to participate in a region-wide outcomes project. Subsequently, programs developed a collaborative quality improvement program. This report presents the survey results along with the outcomes data from July – September, 2006.

BACKGROUND

Cardiac rehab fills a very unique and important role in the overall care of patients recovering from a cardiovascular event. Cardiac rehab starts in the hospital as an inpatient (Phase I) and consists of low-level ambulation and range of motion exercises mainly geared toward activity of daily living needs. Patient education, including smoking cessation, symptom recognition and medication use, are important components in Phase I cardiac rehab.

After discharge from the hospital, patients are referred by their cardiologist or primary care physician to outpatient cardiac rehab (Phase II). Phase II cardiac rehab emphasizes increasing the patient's functional capacity and reducing the debilitating effects of surgery and/or cardiac

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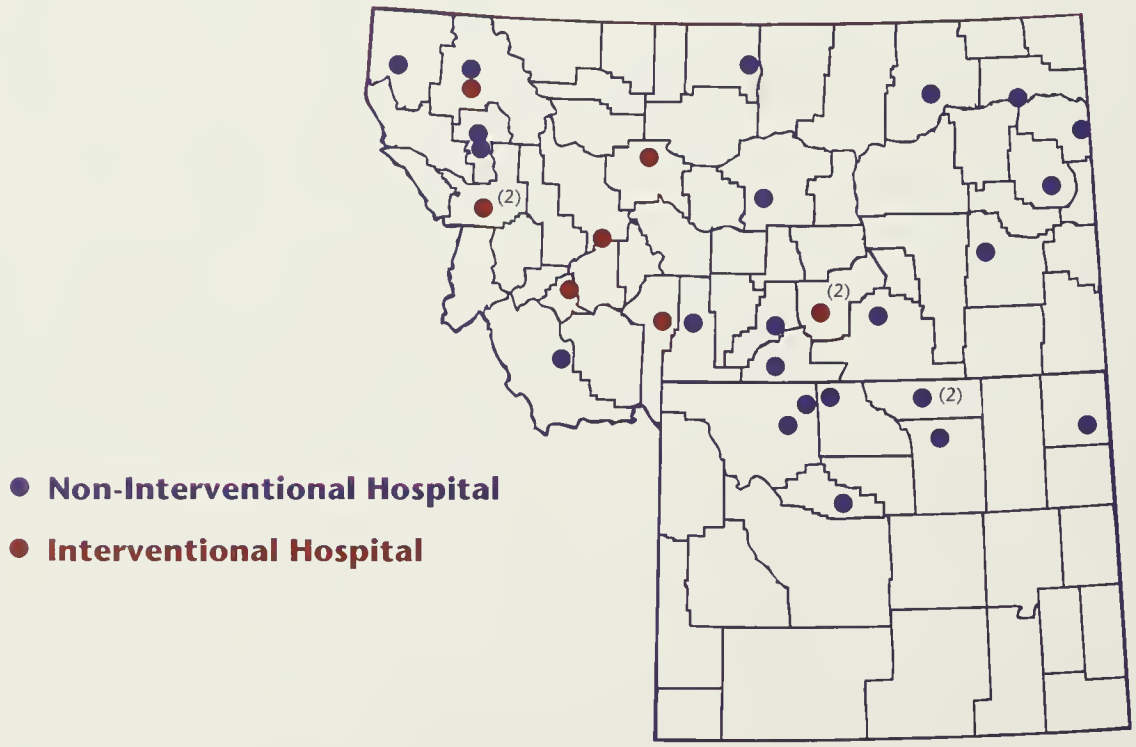
Figure 1. Location of cardiac rehabilitation programs, by type of program, Montana and northern Wyoming, 2005.



event, enabling the patient to return to pre-event vocational and recreational activities. Patients exercise in a medically supervised environment with the overall goal of improving quality of life and reducing the risk of future events. Cardiac rehab also provides valuable and important feedback to referring physicians regarding blood pressure control, heart rate response, blood glucose readings, medication compliance, smoking cessation efforts, electrocardiogram (ECG) status and new onset or changes in symptomology.

An important aspect of Phase II cardiac rehab is risk factor education. By providing education related to the nature of cardiovascular disease, medications and the modifiable cardiac risk factors - smoking, hyperlipidemia, hypertension, diabetes, obesity and sedentary lifestyle - patients can become active partners in the treatment of their disease. Risk factor education is an important component related to long-term recovery and reducing future morbidity and mortality. In addition to the physical rehabilitation and educational component, psychosocial issues are positively affected by participating in cardiac rehab.

METHODS

A total of 33 cardiac rehab programs were identified with 25 programs located in Montana and eight in northern Wyoming. The cardiac rehab programs were divided into programs associated with interventional hospitals (IVH) and non-interventional hospitals (NIVH). An interventional hospital was defined as a hospital that performs percutaneous interventions (PCI) and/or coronary artery bypass grafting (CABG) procedures.

All programs were notified by e-mail that the cardiac rehab survey was forthcoming. The survey consisted of 29 questions related to program description, services and staffing, certifications and quality improvement. The survey was mailed to the program manager at each facility. Addresses were obtained from the MACVPR program database.

RESULTS

All 33 programs in Montana and northern Wyoming completed the survey. Nine (27%) of the 33 programs were affiliated with IVH, and the remaining 24 were affiliated in NIVH. (Figure 1) Twenty-nine (88%) of the programs were hospital-based, and 3 were classified as freestanding or had off-hospital campus locations. One program had 2 sites, qualifying it as both a hospital-based and freestanding facility.

PROGRAM CHARACTERISTICS

The staff make-up for all programs consisted primarily of nurses and exercise physiologists with a limited number of physical therapists, respiratory therapists, techs and aides. The average number of full-time equivalents (FTE) in IVH was significantly greater than in NIVH (2.4 vs. 1.0). (Figure 2) The programs associated with IVH were significantly more likely to provide pulmonary rehabilitation (clinical exercise and education program for patients with lung disease) and heart failure programs compared to NIVH. Compared to NIVH-based programs, IVH programs were more likely to provide wellness, such as community exercise and education classes, and diabetes programs; however, this did not reach statistical significance. (Figure 3)

Figure 2. Average number of full-time equivalents (FTEs) and type of cardiac rehabilitation staff, by type of program, Montana and northern Wyoming, 2005.

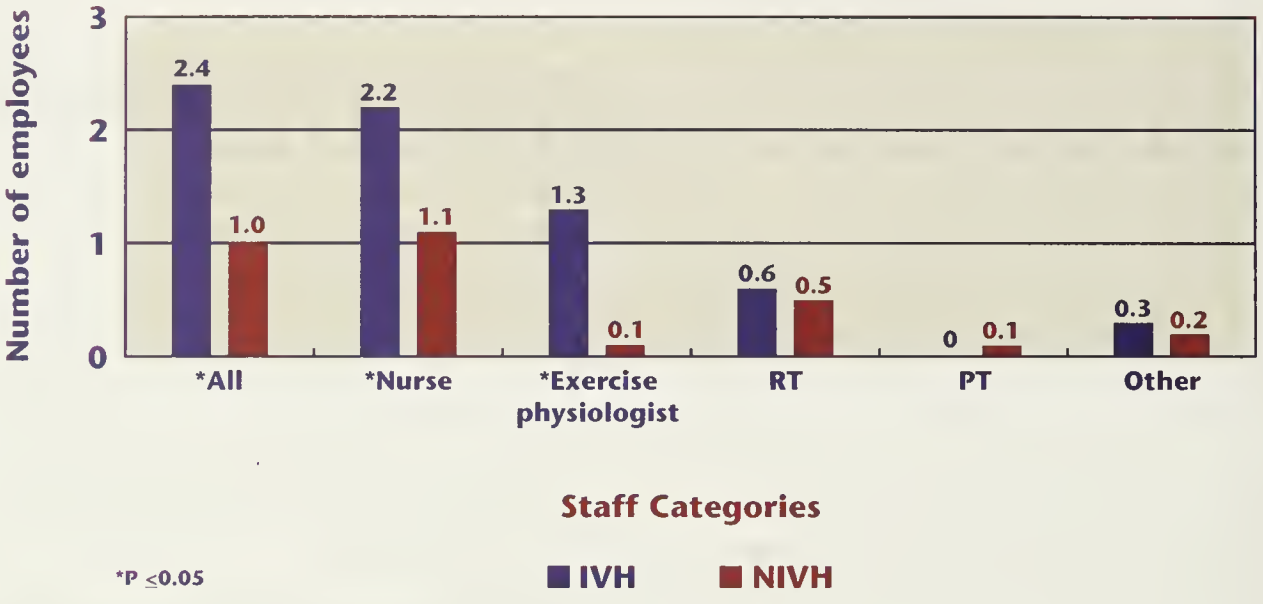
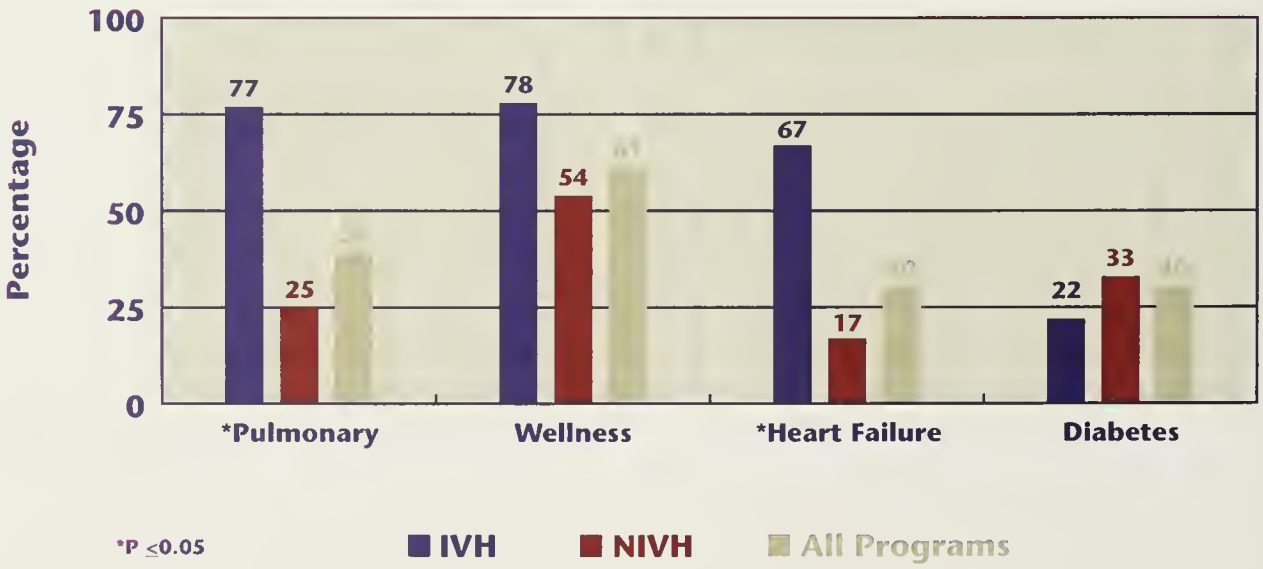


Figure 3. Additional services provided by cardiac rehabilitation programs, by type of program, Montana and northern Wyoming, 2005.



As expected, programs affiliated with IVH served a greater number of patients. Phase I programs associated with IVH reported an average of 28 patients per month compared to just 1 patient per month in programs associated with NIVH. Similar trends were noted in both Phase II and Phase III/IV programs (Phase II: 17 vs. 5 and Phase III/IV: 47 vs. 8). (Figure 4)

Twenty of 33 (61%) programs, 8 IVH and 12 NIVH, reported current involvement in their own, facility specific, outcomes program. Of the remaining 13 programs without a facility specific outcomes program, 1 IVH and 8 NIVH, expressed interest in starting an outcomes program. (Figure 5) Thirty of the 33 (91%) cardiac rehab programs surveyed expressed interest in participating in a statewide outcomes/quality improvement project.

Based on the positive responses collected from the survey regarding the regional outcomes project, the CVH Program and MACVPR developed specific indicators to be tracked. (Table 1) An outcomes manual, which included pre-and post-patient surveys, patient survey administration instructions, scoring protocols, reporting and feedback instructions was

Figure 4. Average number of patients per month, by phase and by type of program, Montana and northern Wyoming, 2005.

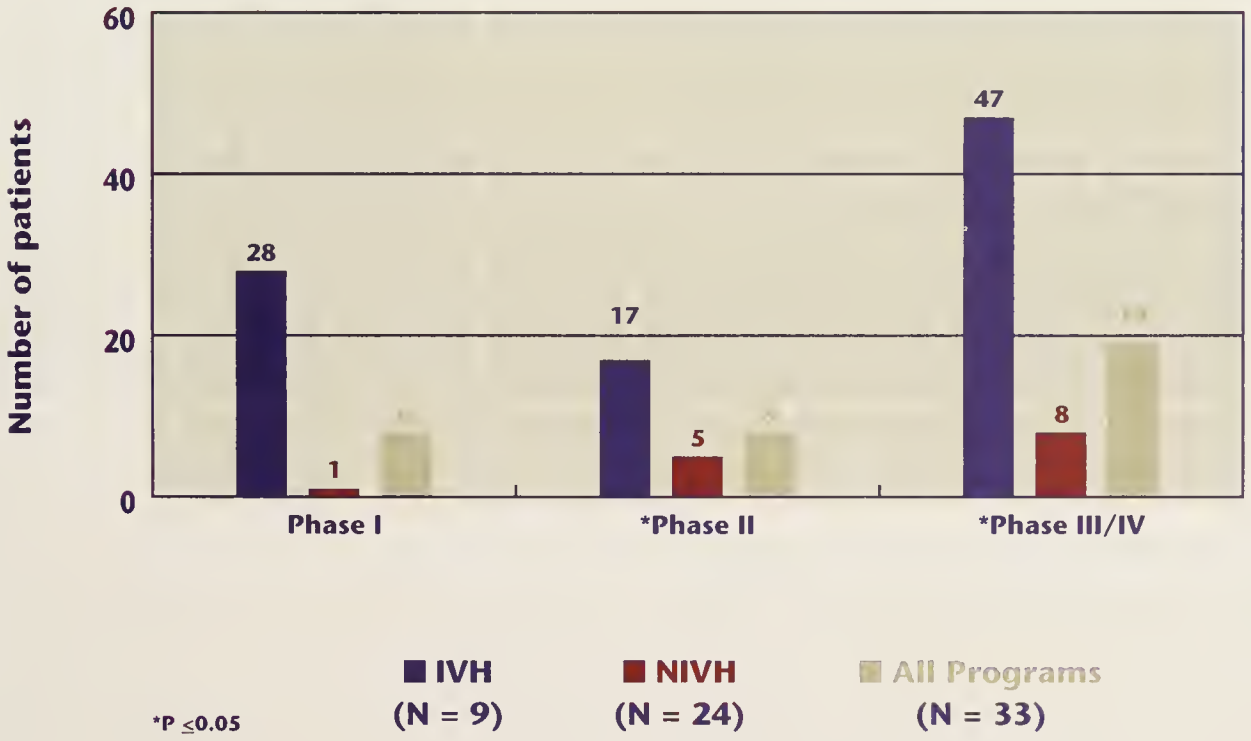
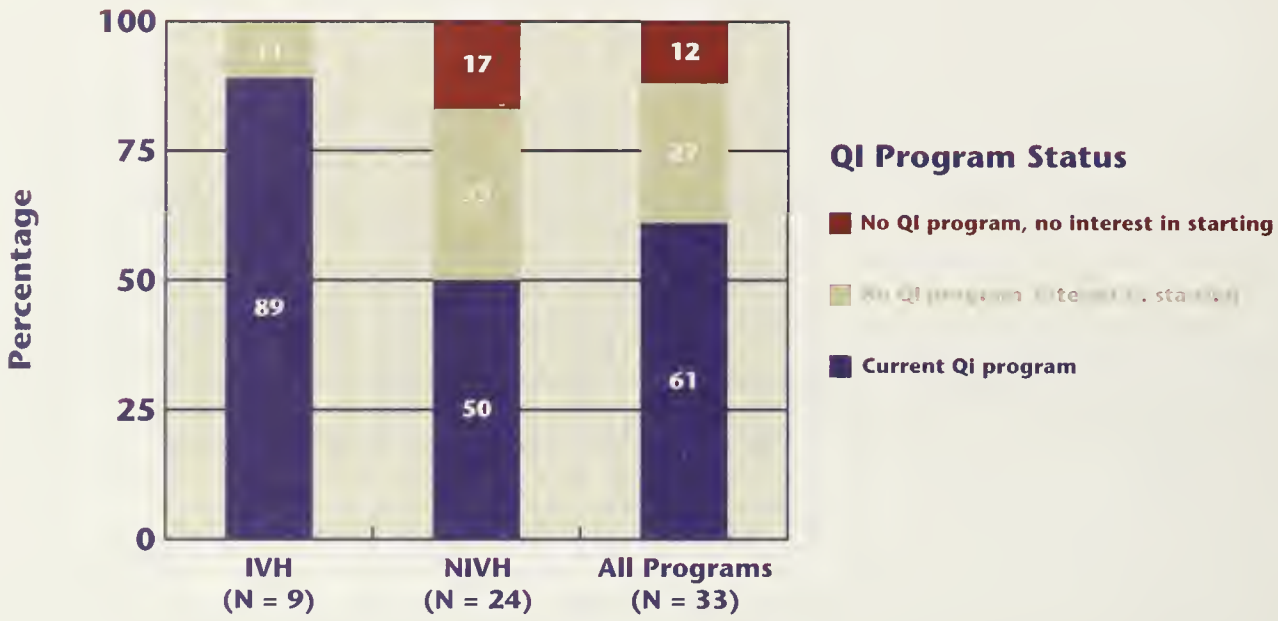


Figure 5. Status of Quality Improvement program, by program type, Montana and northern Wyoming, 2005.



provided. Two training conference calls were made available to provide additional support. Data collection began in July of 2006. The first reporting period was in January of 2007 and included patients that started cardiac rehab between July and September of 2006.

OUTCOMES DATA: JULY – SEPTEMBER 2006

A total of 19 programs submitted outcomes data which included 189 cardiac rehab patients. Demographic and diagnosis characteristics are present in Table 2.

Over the course of cardiac rehab, functional capacity increased by 32%, as measured by the Duke Activity Status Index (DASI). At cardiac rehab initiation, 13% of the patients were classified as smokers vs. 5% after completing cardiac rehab. (Figure 6) Mean resting blood pressure was 118/67 mmHg with 89% of the patients meeting criteria for blood pressure control (<140/90 mmHg or 130/80 mmHg for patients with diabetes). Mean LDL cholesterol was 87.1 mg/dL, 75% had a LDL reading of <100 mg/dL and 95% were on lipid-lowering medications (LLM). Eighty percent of the patient with diabetes had their glyco-hemoglobin (A1C) tested in the past 6 months. Dietary fat intake decreased by 21%, as measured by the Block Dietary Fat Screener. (Figure 7) Patient satisfaction scores were very high with an average of 49 out of a total of 50 points. Two different quality of life surveys were available, and programs could choose which survey to use. The Dartmouth COOP Health Status scores increased 25% while SF-36 physical composite score increased by 24% and mental composite score increased by 8%.

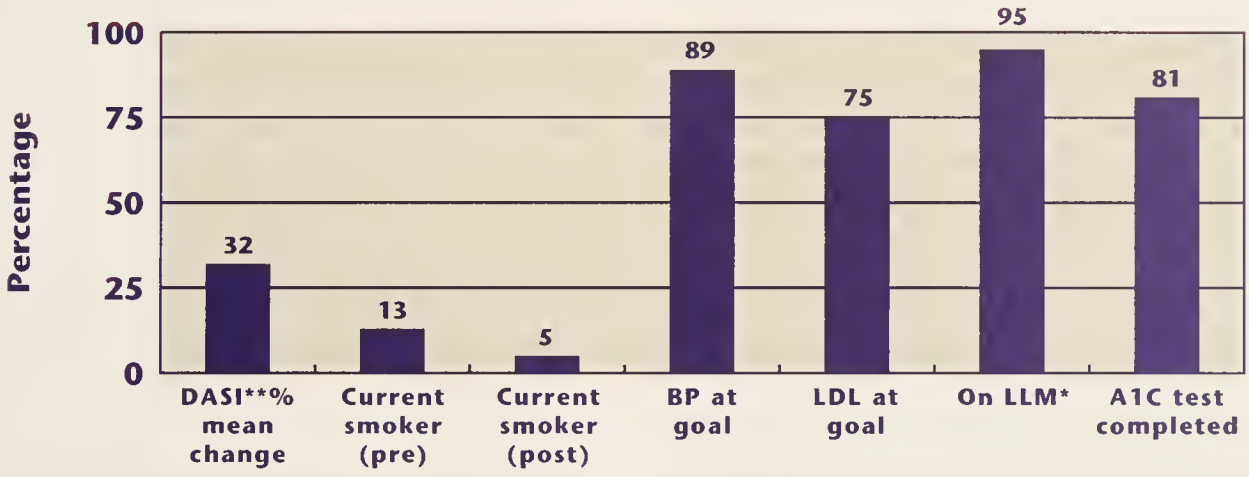
Table 1. Cardiac rehab outcome indicators. Montana and northern Wyoming, 2006.

Demographics	Quality Indicators
Age	Duke Activity Status Index – Physical activity survey
Gender	Smoking status
Ethnicity	Blood Pressure at goal (<140/90 mmHg or <130/80 mmHg for patient with diabetes)
Diagnosis	LDL at goal (LDL<100mg/dL)
Average number of visits	On a lipid-lowering medication • Contraindications for lipid meds
Number of patients	A1C measured in the last 6 months for patients with diabetes
	Block Dietary Fat Screen – One month dietary recall survey focusing on fat intake
	Patient satisfaction – 10 question survey: 1-5 Likert scale (50 total points)
	Program completion rate (≥12 visits)
	Quality of Life Survey • SF-36 – measures physical and mental composite scores related to quality of life • Dartmouth COOP – health survey that measures quality of life

Table 2. Demographic and diagnostic characteristics among facilities participating in the regional outcomes project, Montana and Wyoming, July – September 2006

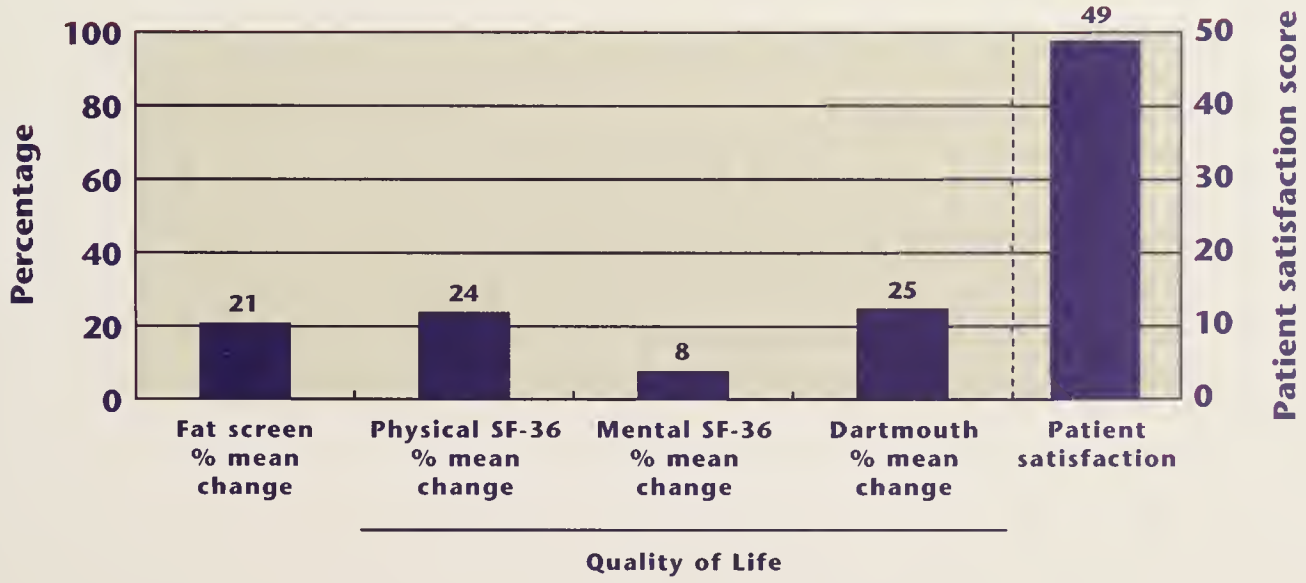
	Total Phase II visits Total (N = 189)
	Mean (Min - Max)
Age (years)	67.5 (13.4 - 89.3)
	Mean/Median (Min - Max)
Number of Visits	23.2/24.0 (0 - 37)
	% (n)
Gender	
Male	68 (128)
Race	
White	97 (184)
Diabetes	22 (42)
Diagnosis	
MI only	4 (7)
CABG only	27 (51)
PCI only	21 (39)
MI/CABG	10 (18)
MI/PCI	30 (56)
Angina	17 (32)
Other	16 (30)

Figure 6. Cardiac rehab indicators for facilities participating in the Regional Outcomes Project, Montana and northern Wyoming, July – September 2006



*LLM - Lipid Lowering Medication
**DASI - Duke Activity Status Index

Figure 7. Cardiac rehab indicators for fat screen, quality of life and patient satisfaction for facilities participating in the Regional Outcomes Project, Montana and northern Wyoming, July - September 2006



CONCLUSIONS

Cardiac rehab fills a very unique and important role in the overall care of patients recovering from cardiovascular events. Cardiac rehab focuses not only on the immediate recovery post event but also addresses important risk factor issues geared toward reducing the risk of future cardiac events. Initial data collected as part of the regional outcomes project indicate that the participating programs are doing an outstanding job providing this valuable service. The CVH Program and MACVPR will continue to collect outcomes data on a quarterly basis, provide participating cardiac rehab programs with valuable information related to their performance compared to regional standards, and assist in implementing program specific QI projects. Thus, clinicians referring their patients to cardiac rehab can be assured that their patients will benefit from this important service.

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SAVE THE DATE!

DIABETES PROFESSIONAL CONFERENCE – GREAT NORTHERN HOTEL, HELENA, MONTANA, OCTOBER 11 – 12, 2007

The Montana Diabetes Project's professional conference will be held on Thursday and Friday, October 11-12, 2007 in Helena, Montana at the Great Northern Hotel. For more information, contact Susan Day at (406) 444-6677 or e-mail sday@mt.gov.

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WYOMING CHRONIC DISEASE CONFERENCE – LITTLE AMERICA HOTEL, CHEYENNE, WYOMING, MAY 7 – 8, 2008

The Wyoming Chronic Disease Conference will be held on Wednesday and Thursday, May 7-8, 2008 in Cheyenne, Wyoming at the Little America Hotel. For more information, contact Wanda Webb at (307) 587-5689 or e-mail wwebb@state.wy.us.

WHAT ARE THE MONTANA DIABETES PREVENTION AND CARDIOVASCULAR HEALTH PROGRAMS AND HOW CAN WE BE CONTACTED?

The Montana Diabetes Control and Cardiovascular Health Programs are funded through cooperative agreements with the Centers for Disease Control and Prevention, Division of Diabetes Translation (U32/CCU822743-05), the Division for Heart Disease and Stroke Prevention (U50/CCU821287-05) and through the Montana Department of Public Health and Human Services.

The mission of the Diabetes Control and Cardiovascular Health Programs is to reduce the burden of diabetes and cardiovascular disease among Montanans. Our web pages can be accessed at http://ahec.msu.montana.edu/diabetes/default.htm and http://montanacardiovascular.state.mt.us.

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